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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/714,756	11/17/2003	George S. Pabis	12093/928	3374

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EXAMINER

PALABRICA, RICARDO J

ART UNIT	PAPER NUMBER
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3641

DATE MAILED: 01/31/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/714,756

Applicant(s)

PABIS ET AL.

Examiner

Rick Palabrica

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 10 January 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-4 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-4 is/are rejected.
- 7) ☒ Claim(s) 1-4 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date <u>1/29/04</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

1. Applicant's election without traverse of Group I, claims 1-4, in the reply filed on 1/10/05 is acknowledged.

Drawings

2. Figs. 2 and 3 appear to be copies of photographs.

Color photographs and color drawings are acceptable only for examination purposes unless a petition filed under 37 CFR 1.84(a)(2) is granted permitting their use as acceptable drawings. In the event that applicant wishes to use the drawings currently on file as acceptable drawings, a petition must be filed for acceptance of the color photographs or color drawings as acceptable drawings. Any such petition must be accompanied by the appropriate fee set forth in 37 CFR 1.17(h), three sets of color drawings or color photographs, as appropriate, and, unless already present, an amendment to include the following language as the first paragraph of the brief description of the drawings section of the specification:

The patent or application file contains at least one drawing executed in color. Copies of this patent or patent application publication with color drawing(s) will be provided by the Office upon request and payment of the necessary fee.

Color photographs will be accepted if the conditions for accepting color drawings have been satisfied.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

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3. Claims 1-4 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 1 recites the following limitations: a) "alignment pins" in line 4; b) "top nozzle" in line 5; c) "shaft", "lock fingers" and "guide thimbles" in line 6; d) "divots" in line

7. Claim 4 recites the limitation, "mandrel shaft" in line 2. There are insufficient antecedent bases for these limitations in the claims.

Note that the preamble recites the generic term "fuel assembly" that applies to any type of fuel assembly, e.g., for pressurized water reactors, boiling water reactors, CANDU heavy water reactors, and fast reactors. Some of these reactors (e.g., CANDU and fast reactors) do not have a fuel assembly with a "top nozzle" and "guide thimbles."

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 1-4 are rejected under 35 U.S.C. 103(a) as being unpatentable over Salton et al. (U.S. 4,834,934) in view of Shallenberger et al. Salton et al. disclose the Applicant's claims except for the divots in the guide thimble. (Examiner's note: The guide thimble referred to by the Applicant is a thimble for guiding a control rod element into a fuel assembly).

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Salton et al. disclose an assembly for gripping the thimble of a fuel assembly and its method of operation (see Figs. 1-11 and col. 6, lines 40+). Salton et al. disclose in Fig. 11 a pressurized water reactor fuel assembly 52 having a top nozzle 139. They show in Fig. 2 their tool (gripping means 32) having alignment pins 134 that engage a top nozzle of the fuel assembly at alignment holes 138 (see Fig. 12 and col. 5, lines 54+). They show in Fig. 1 gripping member 49 of gripping means 32 being disposed inside control rod thimble 50. This gripping member 49 comprises a gripper actuator 97 and deformable sleeve 64 (see Fig. 3).

As to claim 1, Applicant's claim language, "lock fingers" reads on Salton et al.'s the five vertically oriented annular sections of deformable sleeve 64 (see Fig. 3 and col. 3, lines 64+). They disclose that the gripping action of deformable sleeve 64 is by radial expansion into a gripping relation with the inside diameter of guide tube 50 (see col. 6, lines 40+). The radial expansion of the sleeve is provided by gripper actuator 97 when it is translated downwards in preparation to lift the fuel element.

Salton et al. do not provide details regarding the divots in the guide thimbles. However, Shallenberger et al. teach a pressurized water reactor assembly (see Fig. 1) and provide in Figs. 2-7 details on the control rod guide thimble (44) and its mode of attachment to top nozzle plate 40. Figs. 2 and 7 also show details of a plurality of divots in the thimble 44, including divot 52 for attachment to nozzle plate 40, as well as 3 divots above thimble element 14.

One having ordinary skill in the art at the time of the invention would have recognized that the fuel assemblies in Salton et al. and Shallenberger et al. are both for

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pressurized water reactors made by the same manufacturer. Also, comparison of Fig. 12 in Shalton et al. and Fig. 1 in Shallenberger et al. would reveal that both fuel assemblies are 17x17 fuel arrays. Thus, the use of Salton et al.'s thimble grip tool to lift the fuel element that Shallenberger et al. teach would be obvious to one having ordinary skill in the art at the time of the claimed invention because both pressurized water reactor fuel assemblies require insertion or removal from the reactor core.

Also, when Salton et al.'s gripping means is used in lifting Shallenberger et al.'s fuel element, it would have been obvious to the artisan to deploy the gripping means as deep as possible inside the thimble for maximum gripping action. This action would position the sleeve 64 below the divots in the guide thimble, as in claim 1.

Furthermore, as the fuel element is lifted, the tips of sleeve 64 would engage the divots because these tips would be further radially expanded by surface 59 of gripper rod 56 (see col. 5, lines 5+). This action would have the same effect as the claimed step of engaging the lock fingers into the divots to an extended position, as recited in claim 1.

As to claim 2, this step is inherent in the application of Salton et al.'s gripping means in Shallenberger et al.'s fuel element, after the lifting process is completed.

As to claim 4, Applicant's language "mandrel shaft" reads on gripper actuator 97. The claimed step is equivalent to and has the same effect as the downward translation of gripper actuator 97 which causes the elastically deformable sleeve 64 to radially expand (see col. 4, lined 34+). The elastic deformation of the sleeve is equivalent to the claimed "spring tension applied to the lock fingers."

Claim Objections

5. Claims 1-4 are objected to because of the following item. Claim 1 recites the limitations: a) "positioning the lock fingers to a position below divots in the guide thimble"; b) "engaging the lock fingers into the divots to an extended position".

The specification discloses that the elements that contact with the dimples are the "ends" or "tabs" of a finger (see page 2, lines 17+). Thus, it would be more appropriate in these claim limitations to refer to either the "lock finger tabs" or "lock finger ends" instead of the "lock fingers" themselves.

Conclusion

6. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. References B-F further illustrate prior art.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Rick Palabrica whose telephone number is 703-306-5756. The examiner can normally be reached on 6:30-5:00, Mon-Thurs..

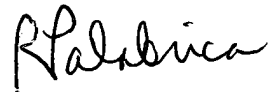
If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Carone can be reached on 703-306-4198. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

RJP

January 27, 2005

A handwritten signature in black ink, appearing to read "R. Palabrica". The signature is written in a cursive, flowing style with a large initial "R".